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Office of the Secretary
Federal Communications Commission
Washington DC 20554FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARYReference: **Mobile Satellite NPRM; FCC 94-11; CC Docket No. 92-166**

Dear Sir or Madam:

Novacom, Inc., a satellite communications engineering consulting firm, hereby provides comments on specific areas of the referenced NPRM, which addresses a new mobile satellite communications service to be furnished by Low-Earth-Orbiting (LEO) satellites.

Novacom was established in 1981 for the purpose of providing technical support to both commercial and government entities in regard to various aspects of new satellite communications systems. The company provides a background of over 40 years of communications engineering experience, principally in satellite communications engineering and management-related issues. In its 13-year course of business, Novacom has engaged in dozens of contracts with a range of responsibilities for implementation of new systems, and has supported many filings and comments to the Commission.

For the past six years, Novacom has provided technical support to both government and private entities specifically in the field of mobile satellite communications. The comments herein are therefore made with a knowledge base regarding mobile satellite communications, and the company considers itself competent to comment in this area.

The NPRM at 56 addresses the use of terminals aboard aircraft, noting that the Committee recommended that such airborne use of a terminal be prohibited except when it has "...a direct physical connection to the aircraft Cabin Communications system." Although no detail is provided, it is assumed that stricter control of the terminals' emissions is the purpose. This recommendation appears sound, and Novacom supports it.

However, the recommendation does not address aircraft communications wherein a physically-connected terminal could support and improve *safety* service communications. Such services now include those provided by civil aviation authorities for air traffic management, and those which are used by operating entities, principally airlines, for a variety of important safety and regularity-of-flight purposes.

There appears to be a LEO systems' opportunity to augment present aeronautical safety service communications to a greater degree--of course, only under conditions where there is no on-board navigation system interference potential. The International Civil Aviation Organization (ICAO) now envisions satellite services as being provided through

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geosynchronous satellites, which presently utilize approximately a dozen "ground" earth stations. However, it also has noted that if the present system architecture were used for many such earth stations--even just one located in each of the world's countries--the result, given current spectrum limitations, would cause so inefficient a use of geosynchronous satellites' spectrum and power as to be infeasible to operate.

On the other hand, to provide relatively infrequent but important safety-related communications that are otherwise impractical or even impossible to realize in some countries, a LEO system might provide the needed aeronautical connectivity--at least for on-demand voice, and most probably, for data messages that are typical of aeronautical usage.

To meet this need, Novacom supports the implementation of LEO systems that could provide this augmentation to safety services under conditions where on-board navigation systems are protected from interference. From a technical viewpoint, it appears practical to avoid this interference by using "physically-connected" LEO transceivers, although implementation of such avoidance has not been well described so far.

To the extent that these services could be provided by one or more LEO systems, the special needs of smaller states' administrations and their aircraft operators to improve the availability and directness of communications with their aircraft could be met. And, because direct societal benefits are provided through safety services and the consequent regularity of flight, broadening current improvements in air safety communications clearly would be beneficial and in the public interest.

As proposed in this NPRM, there does not appear to be a prohibition to an effective and proper, non-interfering communication system for aeronautical safety services' use. For this reason, Novacom supports the furtherance of this Rulemaking in the form proposed, as it has the prospect of enabling a worldwide public benefit, and within a reasonable time.

Yours truly,

A handwritten signature in black ink, appearing to read "D. K. Dement", written in a cursive style.

Donald K. Dement
President